SIDUS SIDARUM—III. *SIDA RZEDOWSKII* SP. NOV., INCLUDING A PRELIMINARY DISCUSSION OF THE *SIDA ELLIOTTII* SPECIES GROUP

PAUL A. FRYXELL

Research Geneticist, U.S. Department of Agriculture, Texas A&M University, College Station, TX 77843

Eight North American species of *Sida* show strong affinities with one another and merit recognition as a distinct species group, as was first noted by Small (1898). The characters that unite them include (1) distinctive conformation of the fruits (generally oblate) and of the mericarps (see Figure 1), which are usually about 8 in number; (2) leaf shape that varies from broadly elliptic to narrowly linear (never rhombic or cordate-ovate); (3) a tendency in some species to rose-colored flowers (at least on drying), reaching an extreme in *S. rzedowskii* with purplish flowers; and (4) a tendency to extreme shortening of the apical internodes in several species, giving rise to congested apical inflorescences.

The abbreviated apical internodes are well expressed in the newly described species, *Sida rzedowskii*, and are suggestive of a similar condition in *Sida* sect. *Malachroideae* (Clement, 1957; Fryxell, 1975). In the latter group of species, typified by *S. anomala* St.-Hilaire, the condition is described by Schumann (1891) as "Flores petiolis bractearum foliacearum adnati, saepissime apice ramulorum subumbellato-congesti" and by Kearney (1954) as "Peduncles adnate to the petiole of the subtending leaf or bract." Careful examination indicates that the adnation of parts characteristic of sect. *Malachroideae* is simply an extension and intensification of the shortening of the apical internodes found in *S. rzedowskii*, *S. neomexicana*, and *S. inflexa* and occasionally expressed weakly in *S. elliottii*. Thus, we find in the present group of species an intermediate condition between the extreme characteristic of sect. *Malachroideae* and the less specialized condition found in the remainder of the genus. It is plausible to suggest that this tie indicates a phylogenetic link connecting sect. *Malachroideae* with the balance of the genus. It should be noted that sect. *Malachroideae* also has a tendency to rose-colored corollas and elliptic leaves, similar to the tendency in the *S. elliottii* group.

I am explicitly not suggesting, however, that the members of the *S. elliottii* group should be included in sect. *Malachroideae*. They are distinguished from the latter by their erect (not procumbent) habit and by their more numerous mericarps that lack rugulose or muriculate ornamentation on the

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dorsal walls, as well as by other characters. The *S. elliottii* group is not now given formal taxonomic status, pending further studies leading to a better understanding of infrageneric groupings in *Sida*. It is simply recognized for the present as a coherent group, without rank, and the following key is presented as an aid to distinguishing the species.

Species are sometimes difficult to distinguish within this group. For example, some intergrading of characters occurs between *S. elliottii* and *S. lindheimeri* (e.g. in Arkansas). In this instance it may be preferable, following more detailed study, to merge the species and distinguish the taxa as *S. elliottii* var. *elliottii* and *S. elliottii* var. *texana* Torrey & Gray. Similarly in northern Mexico, it is sometimes difficult to distinguish *S. elliottii* and *S. nomexicana*. These taxa are retained in specific rank in the key, following prevalent usage. A detailed analysis of these problems is merited.

KEY TO THE SPECIES OF THE SIDA ELLIOTTII GROUP

1. Pedicels up to 15 cm long, usually more than twice the length of the subtending leaves
   2. Leaves narrowly lanceolate, 7–10(–15) times as long as wide; calyx 6–7 mm long . . . *S. longipes*
   2. Leaves broadly elliptic, 1.2–2 times as long as wide; calyx 9–11 mm long . . . *S. potosina*
1. Pedicels no more than 6 cm long, usually shorter than the subtending leaves
   3. Apical congestion of flowers and fruits conspicuous, as a result of abrupt shortening the apical internodes
      4. Corolla rose or purple (with yellow center); leaves elliptic, 2–6 times as long as broad . . . *S. rzedowskii*
      4. Corolla yellowish, sometimes fading rose; leaves lanceolate to linear, usually 5–10 (–20) times as long as broad
         5. Plants freely branched from the base; leaves narrowly lanceolate to linear, 3–6 mm broad . . . *S. neomexicana*
         5. Plants sparingly branched; leaves broadly elliptic, 10–15 mm broad . . . *S. inflexa*
   3. Apical congestion of flowers and fruits slight
      6. Calyx 7–10 mm long; pedicel often 2–5 cm long, shorter than to slightly exceeding subtending leaf . . . *S. lindheimeri*
      6. Calyx 5–7 mm long; pedicel usually 1–3 cm long, shorter than subtending leaf
         7. Leaves linear, often 15–20 times as long as wide; mericarps 8–11 . . . *S. elliottii*
         7. Leaves elliptic, usually 1.5–3 times as long as wide; mericarps 5–8 . . . *S. turneroides*

SIDA ELLIOTTII Torrey & Gray, Flor. N. Amer. 1:231. 1838 (based on *S. gracilis* Elliott, 1822, non Richard, 1792). (*S. rubromarginata* Nash, 1896; *S. leptophylla* Small, 1898). North Carolina south to Florida and west to southernmost Missouri and Arkansas; eastern Mexico from Veracruz and Querétaro north to Nuevo León and the Coastal Bend of Texas.

Sida rubromarginata and *S. leptophylla* have been maintained by Kearney (1954) and others as distinct from *S. elliottii*, but they seem to be relatively broad-leaved and relatively glabrous variants (respectively) of it.

Although Elliott originally described *S. elliottii* as glabrous, examination of Elliott's type reveals that this is incorrect (Weatherby, 1942).

SIDA LINDHEIMERI Engelmann & Gray, Boston J. Nat. Hist. 5:213. 1845. (*Sida texana* (Torrey & Gray) Small, 1903). Central Texas and Louisiana to Sinaloa (1 specimen); cited from Guatemala by Standley & Steyermark (1949) and from Chiapas by Standley (1923), but these may refer to *S. elliottii*.

SIDA LONGIPES A. Gray, Pl. Wright. 1:19. 1852. Trans-Pecos Texas and Coahuila.

SIDA NEOMEXICANA A. Gray, Proc. Amer. Acad. Arts 22:296. 1887. Trans-Pecos Texas, New Mexico, Coahuila, Chihuahua, and Durango.

SIDA POTOSINA Brandegee, Univ. California Publ. Bot. 4:184. 1911. San Luis Potosí and Tamaulipas.

SIDA INFLEXA Fernald, Rhodora 42:463. 1940. A restricted endemic in southeastern Virginia.

SIDA TURNEROIDES Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 22:90. 1940. Hidalgo to Tamaulipas.

SIDA **rzedowskii** Fryxell, sp. nov.

Planta herbacea perennis, minute stellato-pubescens, internodiis apicalibus abrupte abbreviatis. Laminae foliorum ellipticae, dentatae, utrinque stellato-pubescentes. Pedicelli in axillis foliorum summorum, solitarii, plerumque in apicem congesti. Calyces saepe in nervis hirsuti. Petala glabra, purpurascentes. Fructus oblati, in apicem minute pubescentes; mericarpia 8–11, laevigata vel leviter reticulata, 1-seminalia, in apicem acuta vel rotundata.

Herbaceous perennial 1–4 dm tall, the stems branched and suberect, invested with minute stellate pubescence, the internodes abruptly shortened at the apices of the branches. Leaf lamina elliptic or oblong, 1–3 cm long, (2–)3–6 times as long as wide, subacute or obtuse, dentate, 3(–5)-nerved from the base, the lateral nerves inconspicuous, with dense or sparse stellate pubescence above and beneath. Petiole densely pubescent, 4–10 mm long. Stipules 4–7 mm long, linear-lanceolate, sometimes equaling the petiole. Pedicels 1–10 mm long, solitary in the axils of the upper leaves, mostly aggregated apically (forming inflorescences similar to those of *Sida ciliaris* L., with flowers, reduced leaves, and stipules crowded together because of the shortened internodes). Calyx 4–6 mm long, with pubescence like that of the leaves except sometimes hirsute on the nerves, 10-nerved, 5-lobed, the lobes ovate-acuminate. Petals glabrous (including the claw), 6–8 mm long, markedly asymmetrical, rose to red-purple but yellowish at the base. Staminal column pallid, 2–3 mm high, slightly pubescent or glabrous; filaments 1–1.5 mm long, arising from the apex of the column; anthers yellow, few (ca. 20); pollen yellow. Styles 8–11; stigmas capitate. Fruits oblate, 5–6 mm diameter, 3–4 mm high, apically with minute stellate pubescence; mericarps 8–11, 3–4 mm high, smooth or slightly reticulate on the lateral wall, apically acute or rounded and dehiscent, 1-seeded (Fig. 1,D). Seeds 2 mm long,

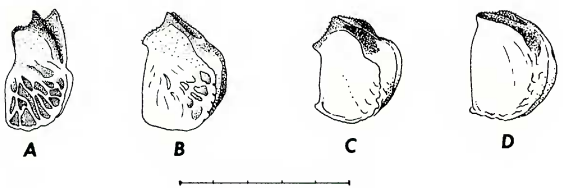

Figure 1. Comparison of mericarps of the four species of *Sida*. A, *Sida lindheimeri* (*Byrd 42*); B, *Sida neomexicana* (*Board s.n.*); C, *Sida elliottii* (*Hill 2841*); D. *Sida rzedowskii* (*Hilerio 72*). Scale = 5 mm.

glabrous, blackish.

TYPE: MEXICO: Hidalgo: Cerro Ventoso, entre Pachuaca y Real del Monte; orilla del camino, matorral de *Hechtia podantha*; alt. 2500 m; flores de color morado oscuro; 29. viii. 1965, *Rzedowski 20560* (holotype: ENCB).

Additional specimens examined:

Hidalgo: Mpio. Pachuca, 4 km al NE de Pachuca, sobre la carretera a Real del Monte, alt. 2650 m, *Rzedowski 33558* (ENCB). Mpio Tepeapulco, Cerro Tres Peñas, alt. 2500 m, *Ventura 245* (ENCB, pf).

Edo. México: Mpio. Tepotzotlán, alrededores de la Presa de la Concepción, alt. 2350 m, *Hilerio 72* (ENCB, pf); ca. 2 km al NW de Tepotzotlán, alt. 2350 m, *Huerta 41* (ENCB); alrededores de la Hacienda Lanzarote, alt. 2350 m, *Rzedowski 35021* (ENCB, pf). Mpio. Huehuetoca, vertiente W de Cerro Sincoque, alt. 2500 m, *Rzedowski 34307* (ENCB); 4 km al N de Huehuetoca, Cerro Ahumada cerca del Rancho Nuevo, alt. 2350 m, *Rzedowski 28403* (ENCB). Mpio. Atizapán, 3 km al NW de Atizapán de Zaragoza, alt. 3400 m [2400 m?], *Cruz 633* (ENCB); Cerro del Tigre, al NW de Atizapán, alt. 2500 m, *Rzedowski 32004* (ENCB, pf).

Distrito Federal: Pedregal de San Angel, cerca de San Angel, *Rzedowski 1019* (ENCB); al sur de Cerro Zacatepec, *Rzedowski 283* (ENCB).

Jalisco: Mpio. Lagos de Moreno, Paso de La Troje, Cerro La Campana, SW of Ojuelos, alt. 2100–2300 m, *McVaugh et al. 16832* (ENCB); 14 miles SW of Lagos de Moreno, *Waterfall 15659* (SMU-in part).

Chiapas: Cerro San Cristóbal, San Cristóbal de las Casas, alt. 7000 ft, *Breedlove 6001* (DS).

San Luis Potosí: Mpio. de Mezquitiq [Mexquitic], km 65 de la carretera San Luis Potosí-Zacatecas; alt. 2090 m; *García 665* (CHAPA, pf).

The new species is named in honor of Dr. J. Rzedowski, author of *Vegetación de México* and coauthor of *Flora Fanerogámica del Valle de México*, whose extensive Mexican collections, especially in the Valley of

Mexico, have brought this species to light. It is especially noteworthy that this species occurs rather commonly in the Valley of Mexico at elevations of 2300–2700 m, higher than any other North American species of *Sida* is known to occur. Moreover, it appears to be confined to these high elevations, extending from Chiapas to northern Jalisco and southwestern San Luis Potosí.

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